



The Role of Blockchain Technology in Enhancing Transparency and Trust in Industrial Relations Negotiations

Muhammad Junaid Kamaruddin¹ Noverina Silalahi²

¹ Universitas 17 Agustus 1945 Jakarta, Indonesia

² Universitas 17 Agustus 1945 Jakarta, Indonesia

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Abstract

The Industrial Revolution 5.0 has brought about a new era in industrial relations, but there are concerns regarding transparency and trust in the negotiation process. Penulis suggests that blockchain technology can address these concerns by enhancing trust and transparency. By utilizing smart contracts, blockchain can increase transparency and security in negotiations with minimal transaction costs. Furthermore, data stored on a blockchain network is difficult to manipulate without authorized authority, thus ensuring the integrity of the system. The researcher use qualitative methods to explain complex subjects, include multiple sources and perspectives, and identify patterns. The application of blockchain technology has already demonstrated increased transparency and trust in supply chain management and can also be extended to industrial relations negotiations. However, further research is needed to fully understand its potential benefits and challenges. To maximize the advantages of blockchain technology, it is recommended to educate the public about its benefits, establish sensible regulations to address security and privacy concerns, and foster collaboration between industry and government to develop consistent standards and a widely accepted framework for blockchain implementation.

Abstrak

Revolusi Industri 5.0 telah membawa era baru dalam hubungan industrial, tetapi ada kekhawatiran mengenai transparansi dan kepercayaan dalam proses negosiasi. Teknologi blockchain dapat mengatasi masalah ini dengan meningkatkan kepercayaan dan transparansi. Dengan memanfaatkan smart contract, blockchain dapat meningkatkan transparansi dan keamanan dalam negosiasi dengan biaya transaksi yang minimal. Selain itu, data yang tersimpan dalam jaringan blockchain sulit untuk dimanipulasi tanpa otoritas yang berwenang, sehingga menjamin integritas sistem. Peneliti menggunakan metode kualitatif untuk menjelaskan subjek yang kompleks, menyertakan berbagai sumber dan perspektif, dan mengidentifikasi pola. Penerapan teknologi blockchain telah menunjukkan peningkatan transparansi dan kepercayaan dalam manajemen rantai pasokan dan juga dapat diperluas ke negosiasi hubungan industrial. Namun, penelitian lebih lanjut diperlukan untuk memahami potensi manfaat dan tantangannya. Untuk memaksimalkan keuntungan dari teknologi blockchain, disarankan untuk mengedukasi masyarakat tentang manfaatnya, membuat peraturan yang masuk akal untuk mengatasi masalah keamanan dan privasi, dan mendorong kolaborasi antara industri dan pemerintah untuk mengembangkan standar yang konsisten dan kerangka kerja yang dapat diterima secara luas untuk implementasi blockchain.

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INTRODUCTION

The purpose of education is a learning process that actively develops the potential of self-discipline, character, and intelligence (Rahman et al., 2022) . This goal can be achieved if everyone is able to work together to improve the quality of education in Indonesia. At this time, education in higher education is very important for all individuals, both generation Z and the millennial generation. Indonesia in particular saw an increase in tertiary education, with the number of students increasing in 2020. According to the data there are 8.6 million students and in 2021 8.96 million students from these data that education in Indonesia has increased by 4.1% (Mahdi, 2022) . In DKI Jakarta, the number of students has decreased in 2019 by 707 thousand students registered and in 2020 by 698 thousand students registered in PDDikti (Kemendikbud, 2020) , Therefore, DKI Jakarta experienced a price increase of 0.2%. The increase in tuition fees in DKI Jakarta by 0.11% is one of the factors for the increase in inflation in DKI Jakarta (Oktaviane, 2020) . Interest in learning can be taken from reading interest data, in 2021 reading interest in Indonesia reached 59.52 on a scale of 0-100. And reading interest in Indonesia has continued to increase since 2016 at 26, in 2017 at 37, in 2018 Indonesia reached 50 (Astungkoro, 2022)

Previous researchers proved that the quality of association (Rukayah et al., 2022 ; Sawiji et al., 2022 ; Falah & Sa'adah, 2022) . Socialization is an interaction activity between friends that can affect learning interest. Someone who has a good quality of association will be better in the learning process and affect learning outcomes. In addition to the quality of association, the growth of interest in learning is also influenced by time management has a relationship with increasing interest in learning (Syelviani, 2020; Putri & Dewi, 2022; Ilahi, 2022) . The ability to manage time allows a person to plan and organize and achieve the desired goals. Students who are able to manage themselves are more interested in learning and achieve higher academic achievement. Independent behavior has an effect on increasing interest in learning (Anggraeni et al., 2021 ; Marito & Riani, 2022; Ratnasari & Sudarwanto, 2022) . Self-directed behavior affects people when analyzing their work and plays an important role in the learning process. In learning activities, interest acts as a force that facilitates learning.

Interest is the basis for the creation of successful learning, if students are interested, students will quickly catch and understand what the lecturer says. Interest in learning can be known from several characteristics, namely the existence of pleasure, desire, interest and awareness of learning needs (kemdikbud, 2022) Therefore, interest is a very important source of motivation for learning and is responsible for student participation in activities and learning. In this study, researchers hope to re-examine and analyze the effect of time management and social quality on learning interest. The difference to previous research is that there has been no research that places the variable of independent behavior as a moderating variable on the effect of time management and social quality on study interest. This will be the latest discussion in this study and will complement previous research.

So it is hoped that this research will make a significant contribution in the field of human resources. Referring to theoretical understanding and the results of previous research. Then the researcher will look for the effect of time management on study interest, the mainstreaming of social quality on study interest, the effect of independent behavior on study interest, moderation of independent behavior on the effect of time management on study interest, moderation of independent behavior on the effect of social quality on study interest. Therefore, researchers are interested in examining "The Effect of Time Management and Sociability Quality on Learning Interest with Independent Behavior as Moderator".

LITERATURE REVIEW

Bloom's Taxonomy and Planned Behavior

The grand theory underlying this research is Bloom's taxonomy of individual understanding. In addition to the grand theory, there are other supporting theories, namely the theory of planned behavior relating to learning interest (Fishbein & Ajzen, 1991) . This theoretical approach has been used to study how interest in learning increases. Therefore, time management and quality of relationships affect the increase in learning

interest.

Quality of Association

Quality of Association is a Challenge in the era of globalization is getting tougher both intellectually and over time. So for teenagers, it is not only material things, but also mental preparation and reality. Because associations are increasingly concerned with society and require the attention of schools, parents and stakeholders (Billah et al., 2022) Association is an activity between one individual and another with a certain period of time giving birth to a relationship of friendship or friendship, namely Closeness, Security, Help, Acceptance (Telaumbanua et al., 2022) .

Time Management

Time management is the control of a person to organize or plan activities to be carried out (Tanjung & Yunus, 2022) . Time management is the ability of students to plan and organize time so that learning outcomes can be achieved effectively and efficiently. Set priorities, avoid procrastination, make a schedule, avoid conflict (Bong, 2022) .

Learning Interest

Interest in learning is a tendency that is maintained to pay attention and remember an activity. Interest Activities Keep Students Happy and Satisfied (Putri & Trisnawati, 2022) Interest in learning is an individual's interest in activities or activities to change various aspects of life. (Ansari, 2022) .

Independent Behavior

Self-directed behavior can be defined as voluntary behavior that includes goals and efforts to achieve goals, use of time and provision of physical and social environments (Kurniawan, 2022) . Independent learning behavior can be measured using several metrics. Metrics to measure learning independence are: Confidence, Self-Competence, Responsibility, Initiative (Hartono, 2022) .

HYPOTHESIS

The Effect of Social Quality on Learning Interest

Association is a good thing that can develop attitudes and behavior, by choosing friends who have positive activities and keeping negative activities away can affect interest in learning (Cook et al., 2022) . Adolescence has dynamics with emotional turmoil along with the development of a person into adulthood. At this age, individuals tend to expand their social environment to support their most important developmental tasks, developing skills that affect self-identity, choice and adherence to principles, and interest in learning (Sawiji et al., 2022) . The level of quality of association has a strong relationship with increased interest in learning (Al Shraah et al., 2022) . Therefore, the quality of controlled associations will have an impact on students in order to increase their interest in learning. Meanwhile, if the quality of association is bad, the interest in learning will decrease. Regarding previous research, the following hypothesis is formed *H1: The quality of association affects interest in learning.*

The Effect of Time Management on Learning Interest

Time management is a personal skill in controlling time through planning and prioritizing so that it can be achieved effectively and efficiently and affects learning interest (Sutrisno et al., 2022) . Time management is the planning, organization of movement and productivity of time. Learning requires different skills and methods to organize study time. Time and learning are closely related, so optimizing learning time is important. Good time management also has benefits as Achieving expected learning outcomes and helping students appreciate and make the best use of time (Panwar et al., 2022) . There is an influence of time management on learning interest (Liu et al., 2022) . Lack of concentration and low awareness, anxiety and fear of failure, and lack of confidence in one's own abilities. This can lead to not being able to control time, which results in time being wasted so that laziness in learning arises. Time management is a major factor in procrastination in schoolwork. In connection with previous research, the following hypothesis is formed *H2:*

The Effect of Independent Behavior on Learning Interest

Independence can be defined as individual initiative, including regulatory efforts to set and achieve goals, time management, and regulation of the physical and social environment can affect learning interest (Anggraeni et al., 2021) . Independence affects learning interest as a learning process that takes place under the influence of one's own thoughts, feelings, strategies, and actions aimed at achieving the goal of student learning success, determined by individual independence can provide learning interest (Lennon et al., 2022) . The level of independent behavior has a simultaneous influence on learning interest (Kong et al., 2022) . Some barriers for students to be able to act independently, easily interact with others, be able to carry out their own roles and responsibilities can develop according to their wishes and be able to fulfill their potential like other students. So this can result in an influence on interest in learning. Regarding previous research, the following hypothesis is formed *H3: Independent behavior affects learning interest.*

Moderation of Independent Behavior on the Effect of Social Quality on Learning Interest

This independence behavior will support the impact of the quality of association on interest in learning, if the quality of association is negative it will have a negative impact on interest in learning and vice versa (Bransen et al., 2022) . Independent behavior will be able to influence adolescent socialization so that it will have an impact on interest in learning (Amka & Dalle, 2022) . Previous research proves that independent behavior and social quality have a positive or negative effect on interest in learning (Susantiningrum, 2022) . Independent behavior and social quality are two very important things in everyday life, if both are done well, it will directly have a positive impact on interest in learning. In connection with the above argument, the following hypothesis is formed: *H4: Independent behavior is able to moderate the influence of social quality on learning interest.*

Moderation of Independent Behavior on the Effect of Time Management on Learning Interest

This independence behavior will support the impact of time management on student academic achievement, academic achievement will be achieved if students have a high interest in learning (Yulyani, 2022) . The use of a time management system that allows facilitating and guiding in streamlining independent behavior in increasing interest in learning is more effective (Khiat, 2022) . Independent behavior can influence between time management and interest in learning which is quite significant based on descriptive analysis (Rambe & Siregar, 2022) . Independent behavior and time management are intertwined, if independent behavior is good, then time management will be good and vice versa. In connection with previous research, the following hypothesis is formed *H5: Independent behavior is able to moderate the effect of time management on study interest.*

RESEARCH METHOD

The population of this research is students in Jabodetabek. The research sample is a representative of the population selected to answer questions related to the research variables. The method of determining the number of samples uses the Hair method, where the number of samples is estimated to be 5 to ten times the number of indicators or the number of questions in the questionnaire (Hair & Alamer, 2022) . The sample selection uses the convenience method (Sudaryana et al., 2022) this method explains that the sample is selected based on the ease of meeting or communicating. The analysis used is regression analysis accompanied by moderation tests or also known as path analysis with the partial least square method (Sekaran & Bougie, 2017) . Analysis of research data using smartpls software (Musyaffi et al., 2022) . This study examines 4 variables consisting of Learning Interest as the dependent variable and social quality variables and time management as independent variables, independent behavior variables as moderating variables. The dependent variable Learning interest is a sustainable tendency to pay attention and remember something activity. Activities that interest students continue to be felt, fun, and satisfying

(Putri & Trisnawati, 2022) . Aspects of life, must be interested in learning because if interested, will understand the learning process very well. Feelings of pleasure, interest and attention (Ansari, 2022) Independent Variable Sociability Quality is an intellectual challenge in the era of globalization that is increasingly demanding from time to time, so for adolescents not only physical preparation but also mental preparation. Being a growing concern in socialization, and requiring the attention of schools, parents, and related stakeholders, caution is needed. (Billah et al., 2022) . Association is an activity between one individual and another with a certain period of time giving birth to a friendship or friendship relationship consisting of four indicators, namely Closeness, Security, Help, Acceptance (Telaumbanua et al., 2022) . Independent Variable Time management is planning, organizing, mobilizing and monitoring time productivity (Pasaribu & Assingkily, 2022) . Students' ability to plan their time so that it can be achieved effectively and efficiently. Set priorities, avoid procrastination, make a schedule, avoid conflict (Putri & Nurjannah, 2022) . Moderating Variable Independent behavior It can be defined as an act of personal initiative involving goal setting and regulatory efforts to achieve goals, time management, and regulation of physical and social environments (Kurniawan, 2022) . Independent learning behavior It can be measured by several indicators. indicators for measuring learning independence are: Confidence, Self-Competence, Responsibility, Initiative (Hartono, 2022) . The data analysis stage consists of respondent demographic data, descriptive statistics of variables, explanation of validity and reliability tests, hypothesis testing and the coefficient of determination (Sugiarto, 2022) . Respondent demographics are respondent data consisting of gender, age and others. Descriptive statistics of variables are the average, maximum, and minimum values of the variables examined. Validity test is a test of the validity of survey questionnaire questions or statements. The reliability test is a test of the costitensiveness of the respondent's answer or a test to see whether the respondent is serious or not in answering the questionnaire questions. Hypothesis testing is a temporary conclusion test that has been previously determined whether it is accepted or rejected. The coefficient of determination is the ability of the independent variable to explain the dependent variable (Nugroho & Haritanto, 2022) .

RESULTS AND DISCUSSION

This study used a selected sample of 157 respondents from among students with 93 female respondents (59%) and 64 male respondents (41%). The age of respondents in this study is based on 3 age groups, namely 17-20 years of age as many as 77 people aged 21-25 years as many as 75 people and age> 25 years as many as 5 people. Descriptive statistics using SPSS (Statistical Product and Service Solutions). The data quality test in this study uses Partial Least Square (PLS) analysis, which is a Structural Equation Model (SEM) equation model with a variance-based approach or component-based structural equation modeling. The software used is SmartPLS (Partial Least Square).

Table 1 Descriptive statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Quality of association	157	1.00	5.00	4.0828	.78644
Time Management	157	1.00	5.00	4.4688	.53767
Learning Interest	157	1.00	5.00	4.1720	.70655
Independent Behavior	157	1.00	5.00	4.2752	.62158
Valid N	157				

Based on the table above, the association quality variable has a minimum value of 1, a maximum of 5, and a mean of 4.0828. For this mean value it is equivalent to 81.6%. Time management variable with a minimum value of 1 and a maximum of 5, and a mean of 4.4688. for a mean value equivalent to 89.3%. Learning Interest Variable with a minimum value of 1 and a maximum of 5, and a mean of 4.1720. For a mean value equivalent to 83.3%. Independent Behavior Variable with a minimum value of 1 and a maximum of 5, and a mean of 4.2752. For a mean value equivalent to 85.5%.

Validity Test

The validity test is a test of the relationship between indicators and variables. Initial assessment or testing of the measurement model is carried out by convergent validity. Convergent validity assessment begins by looking at the validity indicator indicated by the loading factor value. The minimum loading factor value of 0.5 can be considered valid. The following is a picture of the validity test results

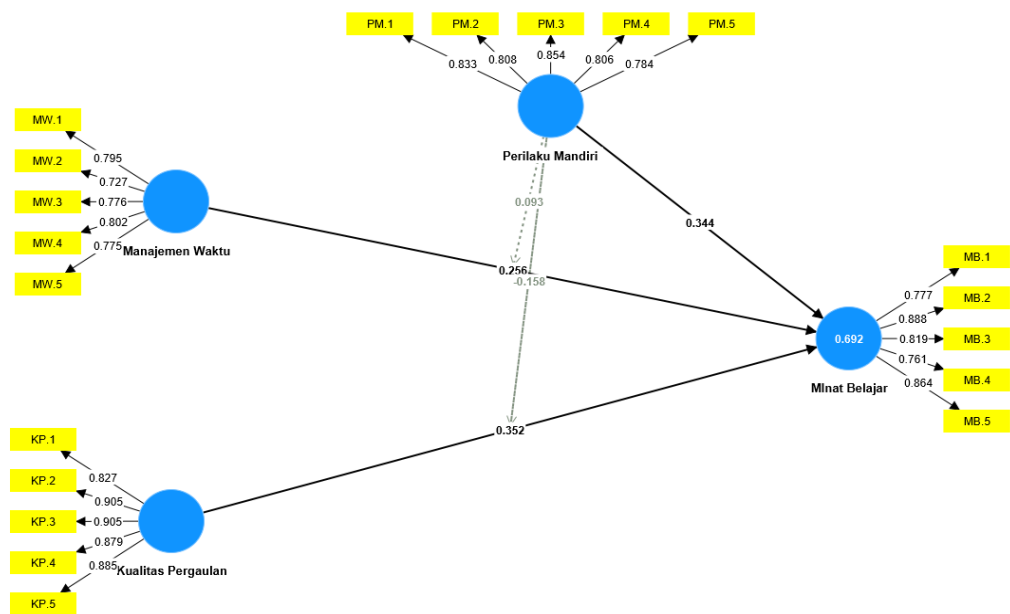


Figure 1 Validity test results

From the validity test results, the variables consist of social quality, time management, independent behavior and interest in learning. Already have a loading factor above 0.5. Even the loading factor in this study is more than 0.7, therefore all question instruments are worthy of representing the variables in this study. And

	Cronbach's alpha	Rho_a	Composite reliability	(AVE)	Decision
Quality of Association	0.928	0.930	0.945	0.776	Approved
Learning Intention	0.880	0.885	0.913	0.678	Approved
Time Management	0.840	0.867	0.883	0.601	Approved
Independent Behavior	0.876	0.877	0.910	0.668	Approved

it can be seen from the AVE of 0.5, which means that the relationship between indicators and variables has met the criteria / valid.

Table 2 Reliability test results

Reliability Test

The reliability test of each variable in the study was modeled as follows: Cronbach's Alpha is reinforced with a minimum value of 0.7 for all variables. Rho_a is reinforced with a minimum value of 0.7 for all variables. Composite reliability has a minumum value of 0.7 to meet the reliability criteria. The AVE value is reinforced with a minimum value of 0.5 to meet the reliability criteria.

In this research model, the variable quality of association has a Cronbach's alpha value of 0.928, Rho_a 0.930, Composite reliability 0.945; Interest in learning has a Cronbach's alpha value of 0.880, Rho_a 0.885, Composite reliability 0.913; Time management has a Cronbach's alpha value of 0.840, Rho_a 0.876, Composite reliability 0.883; Independent behavior has a Cronbach's alpha value of 0.876, Rho_a 0.877, Composite reliability 0.910. From the results of the reliability test the value of Cronbach's alpha, Rho_a, and Composite reliability is greater than 0.7, thus stating that the variable passes the reliability test according to the criteria. The reliability test in Quality of association has an AVE value of 0.776; Interest in learning has an AVE value of 0.678; Time management has an AVE value of 0.601; Independent behavior has an AVE value of 0.668. With the reliability test showing AVE greater than 0.5, all variables in this study are said to pass the reliability test.

Structural Model Test

This analysis is conducted to ensure that the resulting structural model is robust and accurate. This analysis can be considered significant if the T-statistic is greater than 1.96 and the P-value is less than 0.05. Below are figures and tables of research results tested by Partial Least Square (PLS) to determine that the data obtained does or does not affect.

	Original sample	Sample average	Standard deviation	T statistics	P values	Decision
Quality of Association -> Learning Intention	0.352	0.343	0.085	4.123	0.000	Approved
Time Management -> Learning Intention	0.225	0.252	0.065	3.988	0.000	Approved
Independent Behavior -> Learning Intention	0.354	0.358	0.095	3.608	0.000	Approved
Independent Behavior x Quality of Association -> Learning Intention	-0.158	-0.148	0.058	2.742	0.006	Approved
Independent Behavior x Time Management -> Learning Intention	0.093	0.098	0.046	1.998	0.046	Approved

Table 3 Hypothesis Test

The data above shows that all hypotheses are accepted, it can be seen from the T-statistic value greater than 1.96. Based on the hypothesis test results above, it can be described as follows.

Proof of the first hypothesis the results of hypothesis one (H1) the data analysis above shows the T-statistic value of 4.123 or greater than the T-table of 1.96 with an original sample value of 0.352 (35.2%). And with P values 0.000 <0.05, which means that the quality of association has a significant effect on interest in learning. So it is stated that the quality of association can affect interest in learning. This means that the better the quality of association, the better it will be in increasing interest in learning. The quality of relationships in this study has four indicators, namely closeness, security, help and acceptance. Of the four indicators are implemented in several ways the first Close friends can influence motivation, second Close friends can create a sense of attachment and need each other, third trust close friends to keep secrets or all problems and be able to provide a sense of comfort, fourth Friends can help in action and nature, and the last fifth My friend listens to complaints, and provides solutions and motivation. From these implementations, it shows that the quality of association has a significant impact on interest in learning. So, the results of this study are in accordance with research (Cook et al., 2022 ; Sawiji et al., 2022 ; Al Shraah et al., 2022) . shows that the quality of association has a positive and significant effect on interest in learning, it can be concluded that the first hypothesis (H1) is accepted.

Proof of the second hypothesis Time management is proven to have a positive and significant effect on interest in learning with a T-statistic value of 3.988 or greater than the T-table of 1.96 with an original sample value of 0.225 (22.5%) And with P values $0.000 < 0.05$, which means that time management has a significant effect on interest in learning. Time management in this study has four indicators, namely: determining priorities, avoiding delays, scheduling, preventing clashes. Of the four indicators can be implemented in several ways, including: completing tasks in accordance with the agreed contract, determining tasks that must be done according to the priorities that have been made, avoiding delays in assigned tasks, making an agenda of activities long before carrying out these activities, must determine the tasks that are carried out first. This means that the better time management is carried out, the more interest in learning will increase, because time management tends to affect a person's interest in learning. The evidence of this study is in line with research by (Sutrisno et al., 2022 ; Panwar et al., 2022 ; Liu et al., 2022) that time management can have a positive and significant effect on interest in learning. From this it can be concluded that the second hypothesis (H2) is accepted.

Proof of the third hypothesis (H3) independent behavior has a positive and significant effect on interest in learning with a T-Statistic value of 3.608 or greater than 1.96 with an original sample value of 0.354 (35.4%) and a P values value of $0.000 < 0.05$, which means that independent behavior has a significant effect on interest in learning. Independent behavior in this study has four indicators, namely: initiative, responsibility, self-confidence, self-ability. Of the four indicators can be implemented in several ways, among others: believing that satisfactory learning results can only be achieved by one's own efforts, believing that every task done is correct, having a high willingness that arises from within oneself to develop knowledge, having responsibility for the tasks given, having initiative in determining goals. From implementing these things, it shows that independent behavior has a significant effect on interest in learning. Thus a good independent behavior, then someone will feel a good interest in learning. The results of this study support and complement previous research (Anggraeni et al., 2021 ; Lennon et al., 2022 ; (Kong et al., 2022) . shows that independent behavior has a positive and significant effect on interest in learning. From this it can be concluded that the third hypothesis (H3) is accepted.

Proof of the fourth hypothesis moderation of independent behavior affects the quality of association on interest in learning which shows a T-statistic value of 2.742 or greater than 1.96 and a P-values value of $0.006 < 0.05$, which means that moderation of independent behavior on the influence of social quality on interest in learning has a significant effect. The combination of independent behavior indicators with social quality if implemented will also have an impact on interest in learning. Therefore, if independent behavior and social quality are implemented together, it will have a significant impact on interest in learning. The better the independent behavior and the quality of socializing that is applied, the better the interest in learning that is increased. The insights gained from this research can support and complement previous research by (Bransen et al., 2022 ; Amka & Dalle, 2022 ; Susantiningrum, 2022) which leads to the conclusion that the fourth hypothesis (H4) is accepted.

Proof of the fifth hypothesis (H5) moderation of independent behavior has a significant effect and can moderate the effect of time management on study interest which shows a T-statistic value of 1.998 or greater than 1.96 with an original sample value of 0.093 (9.3%) and a P-value of $0.046 < 0.05$ which means that moderation of independent behavior on time management on study interest has a significant effect. The combination of time management indicators and independent behavior if implemented together will have a positive and significant effect on interest in learning. The better in maintaining the quality of association,

the better it will manage time management which makes increased interest in learning. The insights gained from this research can support and complement previous research (Yulyani, 2022 ; Khiat, 2022 ; Rambe & Siregar, 2022) So it can be concluded that the fifth hypothesis (H5) is accepted.

In the learning interest variable, the coefficient of determination (R-square) shows 0.692, which means that the ability of the independent variable to explain the dependent variable is 69.2%. So, there are still other variables that can affect the dependent variable in this study as much as 30.8% which can also be referred to as errors in this study. For the results of the validity test analysis of the research model, the determination coefficient (R-square) value of less than 33% is considered weak, 33% to 66% is considered moderate, 66% to 100% is considered strong. In this study, this model was placed in the strong category because the R-square was greater than 66%. Because in this study the ability of independent variables to explain the dependent variable is 69.2%, it is considered strong.

CONCLUSIONS AND SUGGESTION

This study provides evidence of the impact of social quality and time management on study interest, using independent behavior as moderating. The results of this study indicate that social quality has a positive and significant effect on study interest, time management has a positive and significant effect on study interest, and independent behavior has a positive and significant effect on study interest showing a significant effect, independent behavior is proven to have a significant effect and can moderate the effect of social quality on study interest, and independent behavior is proven to have a significant effect and can moderate the effect of time management on study interest. This study has limitations, namely respondents who sampled only Jabodetabek students aged 17-25 years. This study recommends that students if they want to increase their interest in learning, it is advisable to be able to further improve the quality of association and time management, because some respondents of this study stated that in increasing student interest in learning, students must be able to maintain the quality of association and time management properly in order to increase their interest in learning. students are also expected to be able to maintain good independent behavior, so that students can increase their interest in learning. For future researchers, it is hoped that they can expand the sample because in this study the sample used was only Jabodetabek students aged 17-25 years and add independent variables such as self-consistency, parental support, lecturer quality, learning facilities, and can add different moderating variables to complete the model that wants to be studied next.

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